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ABSTRACT

The limited existing research on text structure and its effects on reading comprehension in English as a native language and English as a second language (ESL) is reviewed, and studies that have shown facilitating effects on first language reading comprehension of explicitly teaching text structure are discussed. A research project in progress that addresses the question of whether ESL comprehension can be facilitated by teaching text structure is described. The study, using a heterogeneous group of advanced ESL students in an intensive English program, involves a training program in text structure, comprised of five hour-long sessions within one week and integrated into the regular ESL reading classes, with much student interaction and individual corrective feedback. A control group not receiving the training simultaneously undergoes the regular curriculum. One pre- and two post-tests are administered, one post-test immediately following the training and one three weeks later. The expected result is that trained students will perform better than controls on both post-tests and on independent measures of reading ability, as was the case in the pilot study. A bibliography and a chart of four types of top-level organization of expository text are included. (MSE)

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FACILITATING READING COMPREHENSION BY TEACHING TEXT STRUCTURE: WHAT THE RESEARCH SHOWS

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March 1984

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FACILITATING READING COMPREHENSION BY TEACHING TEXT STRUCTURE: WHAT THE RESEARCH SHOWS

Patricia L. Carrell

Abstract

Recent research has shown the importance to reading comprehension of the reader's knowing and using the top-level structure of the text. This effect of text structure has been demonstrated for both narrative and expository text (Mandler and Johnson 1977, Meyer 1975, 1977a, 1977b), and for different measures of comprehension, namely written recall protocols, summaries, oral retellings, and question-answering (Meyer 1975, Thorndyke 1977, Kintsch and van Dijk 1978). Since this research has further provided evidence that knowledge and use of top-level structure discriminates good readers from poor readers (Meyer, Brandt, and Bluth 1980), it is reasonable to ask whether instruction which focuses on text structure can improve comprehension, especially for poor readers. Several recent studies (Bartlett 1978, Gordon 1980, Short 1981, Singer and Donlan 1982, Geva 1983) have found that teaching various aspects of text structure can facilitate first language reading comprehension.

In second language reading, relevant research is scanty. Some recent research has begun to investigate the effects of rhetorical organization on second language reading comprehension (Hinds 1983b, Connor 1984, Connor and McCagg 1983a, 1983b, Carrell 1984a, 1984b), and some articles have begun to suggest pedagogical techniques for teaching text structure (Johnson and Sheetz-Brunetti 1983). However, no research has yet been reported on whether explicitly teaching text structure has a facilitating effect on ESL reading comprehension.

This paper reviews the relevant research on text structure and on its effects on reading comprehension in English as a native language and English as

a second language. It then reviews the studies which have shown facilitating effects on first language reading comprehension of explicitly teaching text structure. Finally, based on this research, the article discusses a research project in progress which addresses the question: "Can we facilitate ESL reading comprehension by teaching text structure?"

Introduction

A number of research studies have empirically shown that the rhetorical organization of a text interacts with formal schemata possessed by the reader ---i.e., the reader's background knowledge of and experience with textual organization---to affect reading comprehension. This effect of text structure on reading comprehension has been shown to be true of both narrative and expository texts. For example, the work of Thorndyke (1977), Mandler (1978, Mandler and Johnson 1977, Johnson and Mandler 1980), Rumelhart (1975, 1977), and Kintsch (1974, Kintsch and van Dijk 1978) has shown that different patterns of rhetorical organization of English narrative prose affect the way that prose is understood and recalled by native speakers of English. The work of Meyer and her colleagues (1975, 1977a, 1977b, Meyer, Brandt, and Bluth 1980, Meyer and Freedle 1984) has shown similar effects on native speaker comprehension of English expository prose. Furthermore, these effects on reading have been demonstrated via differing measures of comprehension---written recall protocols, summaries, retellings, and question-answering. Since this latter research on expository prose has provided further evidence that knowledge and use of textual organization---specifically what Meyer calls the "top-level" organization---discriminates good readers from poor readers (Meyer, Brandt, and Bluth 1980), it is reasonable to ask whether instruction which focuses on text structure improves comprehension for poor comprehenders. Several recent studies (Singer and Donlan 1982, Gordon 1980, Bartlett 1978, Short 1981, Geva 1983) have found that teaching various aspects of text structure can improve comprehension for readers of English as a native language.

In second language reading, where the situation is more complex, relevant research is lacking. Some recent research has begun to investigate the effects of rhetorical organization on second language reading comprehension. Carrell (1984a) shows the effects of narrative rhetorical organization on ESL reading

comprehension. Connor (1984, Connor and McCagg 1983a, 1983b) has examined the effects of one type of English expository organization on Japanese and Spanish ESL readers. Carrell (1984b) has shown the differing effects of four types of expository organization on ESL readers of Arabic, Spanish, and Oriental backgrounds. Hinds (1983a, 1983b) has shown differing effects of a traditional Japanese organization on Japanese ESL readers and native English readers. Based on this research, sone papers have begun to suggest a variety of pedagogical techniques for teaching various aspects of text structure to improve reading comprehension (Johnson & Sheetz-Brunetti 1983). However, no empirical research has yet been reported as to whether explicitly teaching text structure has a facilitating effect on ESL reading comprehension.

My purposes in this paper are four-fold. First, I shall review the relevant research on the effects of text structure on reading comprehension in English as a native language. Second, I shall review recent research on the effects of text structure on reading comprehension in English as a second language. Third, I shall review the studies which have shown the facilitating effects on first language reading comprehension of explicitly teaching some aspects of text structure. Finally, based on all of the foregoing, I shall describe an experiment currently in progress which has been designed to investigate the question: "Can we facilitate ESL reading comprehension by teaching text structure?"

English as Native Language = Evidence that Text Structure Affects Reading

Within the theoretical framework of what have been labeled story grammars (if looked at from the perspective of a narrative text as a linguistic object), or story schemata (if looked at from the perspective of the mental processing of narrative text), it has been empirically demonstrated that narratives typically have a hierarchical schematic structure, that readers are sensitive to such structure, and that when the structure is used to guide comprehension and recall, both are facilitated. For example, using four different narrative patterns for a single passage---each one exemplifying a simple narrative story describable by a generative story grammar of plot structures---Thorndyke (1977) showed that comprehensibility and recall were dependent on "the amount of inherent plot structure in the story, independent of passage content" (1977:77) Specifically, he showed that subjects' ratings of comprehensibility, and their performance on recall, summarization, and recognition tasks were all affected by the differences in the rhetorical organization of narrative passages. He further found that recall probability of individual facts from passages depended on their relative height in the hierarchical plot structure of the passage: "subjects tended to recall facts corresponding to high-level organizational story elements rather than lower-level details" (1977:77). In addition, story summarizations produced from memory tended to "emphasize general structural characteristics rather than specific content" (1977:77).

Within this same theoretical framework, Kintsch (1974, 1977, Kintsch, Mandel, and Kozminsky 1977, Kintsch and Greene 1978) has studied the effects of story grammars or story schemata on comprehensibility ratings, summarizing, and retelling tasks, using narrative texts presented in normal and scrambled orders, and also using narratives from American Indian culture which violate western European/Anglo-American story structure. His research has shown that stories presented in scrambled order are less well rated, recalled, or

summarized than stories presented in normal order, and also that certain American Indian stories, which deviate from the expected story structure, are less well recalled and retold by Anglo-Americans than stories which meet their story schemata.

Building upon Kintsch's (1974) hierarchical propositional system of text analysis, Kintsch and van Dijk (1978) have proposed a comprehensive model for text comprehension. Their concept of the macrostructure of a text and its role in a theory of discourse production and comprehension is a direct outgrowth of earlier findings on the role of top-level rhetorical structure in memory for the gist of a story.

In the same theoretical framework of viewing a story grammar as a schema for simple narratives, Rumelhart (1975, 1977) has similarly shown that rules which govern the formation of summaries of narrative texts may be derived from rules which describe the underlying rhetorical organization of a narrative. In other words, the quantity and quality of gist recall of a narrative text appears to be directly related to the match between rhetorical organization of the story and the reader's schema for stories.

Mandler (1978, Mandler and Johnson 1977, Johnson and Mandler 1980) has shown the powerful effects of story schemata in first language comprehension for both adults and children. Mandler's data show that not only do adults use their knowledge of story structure to guide comprehension and recall, but that children as young as first grade have acquired story schemata and use them to organize their comprehension and recall (see also Adams and Collins 1979, Adams and Bruce 1980, Glenn 1978, Stein and Glenn 1979).

Turning now from narrative prose to expository prose, the research of Bonnie Meyer and her colleagues and students (1975, 1977a, 1977b, 1977c, 1979; Meyer, Brandt, and Bluth 1980; Meyer and Freedle 1984; Meyer, Haring, Brandt and Walker 1980; Meyer and Rice 1982) has shown similar effects on reading comprehension of differences in the rhetorical structures of expository prose. In her research on what is learned from expository texts, Meyer has gathered evidence that what she calls the "content structure" (1977a:307), or the way the information in a passage is organized, is an important factor in reading comprehension. Specifically, her research has shown that information located high or at top levels in the hierarchical organization of a passage is recalled better than information at lower levels, both immediately after reading or listening, and also over time. Further, her evidence with delayed cued recall shows that the greater memorability of top-level information is not due to differences in retrievability---that is, it is not simply a matter of high-level information being more easily retrieved from memory than lower-level information. Instead, it seems that more top-level information is actually stored in memory.

The top-level information in content structure corresponds to what is generally regarded as the main ideas of a passage and the interrelationships among these main ideas. The top-level structure carries the central message of a passage. Pearson and Gallagher (1983) call this the author's "central strategy." By contrast, the lower-levels of the content structure correspond to information generally regarded as detailed information, supporting ideas. Figure 1 illustrates some of the different ways Meyer's research has shown expository texts may structure their top-level information.

Insert Figure 1 about here

By way of explaining why it is that top-level information should be more memorable than low-level information, Meyer hypothesizes that in the process of comprehending a text readers who possess and utilize the appropriate formal schema for a text rehearse and subsequently store in long-term memory concepts and interrelationships most centrally related to the higher-level organization in a passage. As the reader attempts to relate the incoming information from the text to the main ideas of the text, this top-level organization consequently gets rehearsed with each new piece of information the reader attempts to integrate. Peripherally related information gets rehearsed less in memory; each piece of supporting information gets stored in the proper place in the hierarchy, but does not get rehearsed over and over again, and is thus more quickly forgotten.

Meyer's research has also revealed differential effects on reading recall among these various patterns of top-level rhetorical organization. In two sets of experiments with texts of essentially the same content but different top-level organizations, the collection of descriptions type of organization was the least effective in facilitating recall when people read a text for the purpose of remembering it. Readers of the comparison and causation versions did better on immediate recall, and on delayed recall and delayed question-answering, both one week later. Meyer has obtained similar results for both ninth-grade level readers (Meyer, Brandt, and Bluth 1980) and for adult college undergraduates (Meyer and Freedle 1984).

Meyer's research has further shown that when readers identify and utilize the top-level organization of a text during reading and during recall, they tend to recall more than readers who do not. Meyer has found that if readers organize their recall protocols according to the text's top-level structure, they remember far more content---retaining not only the main ideas especially

well, even a week after reading, but also recovering more details. This ability to identify and utilize top-level content structure in reading and recall, Meyer has found is highly correlated with independent measures of reading skills: students who demonstrate good reading comprehension skills on standardized tests are the ones who tend to be able to identify and utilize top-level structure; poor readers do not (Meyer, Brandt, and Bluth 1980). I shall return to this difference between good and poor readers when I discuss training experiments which attempt to teach the identification and utilization of top-level content structure.

English as a Second Language - Evidence that Text Structure Affects Reading

Based on Mandler's (1978, Mandler and Johnson 1977, Johnson and Mandler 1980) research with story grammars and simple narrative structures, Carrell (1984a) has demonstrated the effects of simple narrative schemata in reading in English as a second language. Using simple two-episode stories which either followed the format of a simple story grammar (that is, texts which presented the two episodes sequentially in standard order) or which systematically distorted that format (that is, texts which systematically interleaved parts of the two episodes) differences were found in both the quantity of and temporal sequence of recall. Quantity of recall was enhanced when the story was structured with a rhetorical organization that conformed to the simple story grammar---that is, one well structured episode followed by the other---than when the story was structured with a rhetorical organization that violated the story grammar. Further, the recalls produced by those who read the stories which violated the story grammar showed a strong effect of the story grammar in the tendency of the temporal sequencing in those recall protocols to reflect the story grammar order rather than the input order. That is, ESL readers who read the interleaved, distorted versions attempted to unscramble that order and use the standard order in their recalls.

By now, several studies have been done showing the effects on ESL reading comprehension of differences in the rhetorical organization of expository prose. Hinds (1983a, 1983b) has compared Japanese and English readers, reading in their respective native languages, on texts with a typical Japanese rhetorical structure. His findings show that not only is the Japanese structure generally more difficult for the English readers than for the Japanese readers, but that particular aspects of that rhetorical organization are extraordinarily problematic for English readers, especially in delayed recall. He concludes that the traditional ki-sho-ten-ketsu pattern of

contemporary Japanese expository prose is more difficult for English readers because of its absence in English expository prose. That is, native English readers lack the appropriate formal schema against which to process the Japanese rhetorical pattern.

The research of Connor is also relevant here (Connor 1984, Connor and McCagg 1983a, 1983b). Connor has compared the reading comprehension of Japanese and Spanish readers of ESL to that of a group of native English readers on an expository text with Meyer's problem/solution type of top-level structure. In analyzing the recall protocols produced immediately after reading, Connor (1984) found that although, in general, the native English readers recalled more propositions from the original text than the non-native readers, the difference was in the number of low-level ideas rather than the number of top-level ideas. That is, the non-native readers recalled about the same number of top-level ideas at the native readers, but recalled far fewer low-level ideas. The non-natives tended not to be able to elaborate on the main ideas with supporting details. This turned out to be a significant disadvantage when their recall protocols were holistically evaluated by ESL writing teachers as reported in Connor and McCagg (1983a). Although not reported by Connor and McCagg (1983a) as a systematic finding, it is interesting to note that the native and Spanish recall protocols receiving the highest ratings by the ESL writing teachers reflected the problem/solution organization of the original text; neither the highest-rated, nor the lowest-rated Japanese protocols reflected this top-level content structure.

Finally, a study by Carrell (1984b) shows the effects of four different English rhetorical patterns on the reading recall of ESL readers of various native language backgrounds. That study showed that the more tightly organized patterns of comparison, causation, and problem/solution are generally more

facilitative of recall of specific ideas from a text than is the more loosely organized collection of descriptions pattern. In this finding, ESL readers generally appear to be similar to the native readers tested by Meyer (Meyer and Freedle 1984). However, that study also found significant differences among the native language groups (Arabic, Spanish, and Oriental) as to which English discourse types are more or less facilitative of recall. For example, the Arabic group found the collection of descriptions type equal to the problem/solution type, and more facilitative of recall than the causation type. The Spanish group found the collection of descriptions type far less facilitative of recall than any of the other three. The Oriental group (predominantly Korean, plus a few Chinese) found the causation and problem/solution types about equal, and both of these were more facilitative of recall than the comparison and collection of descriptions, which were about equal.

Having reviewed the literature which shows that text structure, especially the top-level rhetorical organization of a text, affects the reading comprehension of both native English and ESL readers, I shall now move to consider the literature which attempts to answer the question behind the title of my paper: "Can we facilitate reading comprehension by teaching about text structure?"

English as a Native Language - Training Studies

There is by now a fairly extensive literature on intelligent behavior and the training of intelligence in general (e.g., Detterman and Sternberg 1982), on the training of general learning strategies (Dansereau, Holley, and Collins 1980), on the training of metacognitive abilities (Brown, Campione, and Day 1981), and also on the training of various reading comprehension skills (Day, 1980, Collins and Smith 1982, Gordon and Pearson 1983, Brown and Palinscar 1982, Bransford, Stein, and Vye 1982). To review this general literature, however, would take us beyond my purposes today. I shall, therefore, limit my review to training studies which have been conducted to show that teaching various aspects of text structure can have a facilitating effect on reading comprehension.

Singer and Donlan (1982) report a study which showed that readers can improve in their comprehension of narrative prose by being taught the schema for simple stories, and by being taught a strategy for posing schema-general and story-specific questions to guide their interaction with the text. Singer and Donlan reasoned that it was not sufficient to teach the reader about the story schema (for the reader may very well already possess that knowledge anyway), but that the reader also needs to be taught a strategy for applying this knowledge to the story. They taught a group of American 11th graders a general problem-solving schema for short narratives (e.g., that a story involves a leading character who wants to accomplish a goal; the character adopts a plan for achieving the goal; on the way to the goal s/he encounters obstacles which the character overcomes, circumvents, is defeated by, etc.). Singer and Donlan then taught these 11th graders how to formulate general questions related to this schema (e.g., Who is the leading character? What is the character trying to accomplish?). Then they had the students practice deriving their own story-specific questions from these schema-general questions

(e.g., Is this story going to be more about the officer or the barber? Will the barber kill the officer with the razor?). They then tested the readers' ability to use these tools to comprehend short stories typically read at the high school level. Using criterion-referenced tests, they compared the comprehension of this experimental group to a control group taught to comprehend short stories through the traditional method of teacher-posed questions. Their results showed statistically superior performance by the experimental group.

In a recent dissertation, Gordon (1980) compared the effects of three different instructional strategies on the comprehension of narrative selections in natural classroom settings. Fifth grade children of average and above average reading ability, using the same basal reader in one school, were randomly assigned to one of three treatment groups: Content and Structure, Inference-Awareness, and Control. Each group received daily 10 minutes of differential treatment related to each basal reader selection and 20-minutes of the regular basal reading program. During each 10-minute period, the Content and Structure group received instruction to improve pre-existing content schemata and knowledge of the macrostructure of text. The Inference-Awareness group was given training in the use of a metacognitive strategy designed to improve their ability to make text-based inferences and to relate prior knowledge (content schemata) to textual elements. With this group's focus on content schemata, we might label this group the Content group. The Control group received differential instruction in language-related, literature appreciation or creative activities pertinent to the basal reader story. Among a number of specific findings in this study, Gordon reports that the Content and Structure group significantly exceeded ($p<.01$) both other groups on overall written recall on the final test. Thus, a group taught both text structure and content strategies not only outperformed a control group, they

also outperformed a group taught content strategies only.

Yet another dissertation, this one by Short (1982) designed a self-instructional program for fourth graders to remediate less skilled readers' limited use of story schema. After only three training sessions, Short found that story grammar strategy training significantly enhanced less skilled readers' free and prompted recall performance, with those receiving the strategy training indistinguishable from skilled readers. Short observed that "the marked changes in story recall brought about by three training sessions indicated strategy training appeared to change passive poor readers into active, strategic learners." (1982: from the abstract)

Turning now to training experiments with expository texts, Geva (1983) used training in a text-mapping strategy to aid students to understand and remember text information. Text-mapping (Pearson and Gallagher 1983, Armbruster 1979) involves selecting key content from an expository passage and representing it in some sort of visual display (boxes, circles, connecting lines, etc.) in which the relationships among the key ideas are made explicit. Geva (1983) reports two studies designed to train less skilled readers to pay closer attention to hierarchical aspects of text. Community college students were taught to represent prior knowledge and text structure in nodes-relation flowcharts, which represent the ideas as nodes, and the relations between and among the ideas as labeled connectors. In the first study, students in the experimental group received 20 hours of instruction focused on the identification of causation and process descriptions in factual expository texts. Students in the control group received individualized teaching related to speed reading, text skimming, looking for key words, and identifying conjunctions in texts. At the end of a five-week training period, the experimental group showed not only significant improvement on the flowcharting task, but also on the Nelson Denny Reading Comprehension test. Yet, there were no differences

between the experimental and control groups on the Nelson Denny Reading Comprehension test---both groups showed similar gain scores. In her second study, Geva showed that less-skilled readers benefitted from the instruction more than moderately-skilled readers---the gain scores of the less-skilled experimental students on the Nelson Denny Reading Comprehension test significantly exceeded the gain scores of the moderately-skilled experimental students and of the less-skilled control students. Geva speculates that "students with higher initial reading abilities had at least an implicit knowledge of text components before the experimental intervention" (1983:395); for them, the training program may have been redundant as a means of improving reading comprehension. Geva concludes:

> "The results seem to support the conjecture that learning to recognize text structure through flowcharting transferred to more careful reading of expository texts by less skilled readers." (1983:384)

The last training experiment I shall review was conducted by Bartlett (1978), one of Meyer's doctoral students. Bartlett spent a week---five one-hour sessions---teaching a group of ninth graders to identify and use Meyer's comparison, causation, problem/solution, and collection of descriptions text types. This group read and was tested for the recall of texts on three occasions: before training, a day after training, and three weeks after instruction. A control group participated in all the testing sessions, and during training was exposed to the same instructor and the same texts, for the same amount of time, but engaged in a punctuation activity as part of a grammar program. At the beginning and end of each training session, students in the experimental condition were informed of the objectives of instruction---i.e., to identify top-level structure in prose passages during the reading of the passage, and to use that top-level structure in organizing written recall

of the passage. Bartlett's results showed that the trained group remembered nearly twice as much content on the post-tests as on the pre-tests---both one day after instruction and persisting until three weeks after. Further, on the tests after instruction, the trained group did twice as well as the control group.

In an interesting addendum to Bartlett's dissertation, a letter from the regular classroom teacher of the students in the experimental group attests to the persistence and carryover of the skills they learned. The teacher says the students reacted favorably to the skills they learned, considered what they learned to be a valuable tool, gained confidence in themselves as learners, and also gained specific skills that carried over to subsequent units of study through the rest of the school term.

English as a Second Language -- Training Studies

Although some researchers have suggested that teaching various aspects of text structure ought to facilitate ESL reading comprehension (including Carrell 1984a), and some have even suggested a variety of pedagogical techniques whereby this teaching might be most effectively accomplished---including text-mapping strategies like Geva's flowcharts (Johnson and Sheetz-Brunetti 1983), I am aware of no research showing that such training does indeed enhance ESL reading comprehension. In this last part of the paper, I'd like to briefly describe a training study currently in progress which has been designed to answer the question: "Can we facilitate ESL reading comprehension by teaching text structure?"

The training sessions were pilot tested only last week, so all I can report at this time are aspects of the design of the study, and some very preliminary indications of what we think our results will be.*

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*I am assisted in this research by three graduate research assistants, whom I would like to publicly acknowledge: Pam Griffin, David Miller, and Takako Oshima.

Subjects. This study is being conducted with a heterogeneous group of intensive ESL students enrolled in Level 4 (the most advanced regular level) at the Center for English as a Second Language at SIU-C. These students are generally characterizable as high-intermediate level in terms of their overall English proficiency. Native language groups represented are: Spanish, Arabic, Korean, Malaysian, plus a handful of Europeans.

Training Procedures. Training is based loosely on Bartlett's training procedures. Five one-hour sessions, all within one week, are conducted in the

students' regular ESL reading classes. The training covers four of Meyer's major discourse types---the four shown in Figure 1. The sessions begin simply, presuming no prior background and using lots of short and easy illustrative text passages; the sessions build during the week to longer and more subtle passages. All text passages are naturally-occurring texts, selected from a variety of sources. Each session begins and erds with reviews of the training program's objectives, and each session reviews the previous day's main points.

The teaching style attempts to be highly motivating and engaging for the students, and involves lots of student interaction with the materials and lots of individual corrective feedback. It begins with the teacher doing most of the talking, demonstrating, etc., but moves quickly to shifting the responsibility for learning to the students, and allows them to work at their own pace.

The basic objectives of the teaching program are explicitly communicated to the students. Specifically, we explain to them that sometimes it doesn't matter how they read---for example, when they are reading for pleasure. Other times, it does; sometimes, especially as students studying English for academic purposes and headed for the university, they will be called on to read lots of information and to remember it---for example, in preparing for exams and class assignments. We explain that the efficiency with which students can read under such circumstances is important; that if they can get the necessary information quickly and effectively, it is likely they will perform well and feel better about the task. We explain that over the five-day training period, we will be teaching them a strategy for reading that should improve their understanding of what they read and their ability to recall it. We emphasize to them that by teaching them a little about the ways in which expository texts are typically organized at the top-level, we hope to be able to teach them how to use this knowledge to improve their comprehension of what they read, as well

as to teach them a strategy for using this knowledge to improve their recall of what they read.

During each training session, each student works with a study packet, which is the focus of that session's activities. Everyday as they leave the session, they are asked to apply what they are learning to all of the reading they do until the next session. This is intended to get the students to use the strategy outside their ESL reading classroom, in other non-teacher supported reading situations.

The lesson plans are full of detailed explanations of the benefits of learning the strategy, along with checklists so students can monitor and regulate their own learning.

Control Sessions. While the experimental group is going through the training sessions, a control group of similar students goes through the regular CESL Level 4 reading curriculum. However, during this one week period, the control students are exposed to the same text passages as the training students. They perform various linguistic operations with the texts (e.g., sentence combining and grammar exercises) and they also focus on the content of the texts (e.g., question-answering and discussion). These students also, obviously, undergo the same pre- and post-testing as the training students.

Testing Procedures. There are one pre-training and two post-training tests; one post-test takes place in the class period immediately following the final training session, and a second post-test takes place 3 weeks after training. The pre- and post-tests involve testing only two of Meyer's four discourse types: comparison and collection of descriptions. Each test consists of the students reading texts with these two top-level structures, writing an immediate free recall, and identifying the text's overall organization by answering an open-ended question. The recall protocols are scored for the

number of idea units recalled from the original text; they are also scored for the discourse type used to organize the recall. The questions are scored on whether the reader correctly identified the discourse type or not.

Students are also pre- and post-tested on independent measures of their reading ability---i.e., a general reading test, independent of this study. We re interested in seeing the relationship between the training and performance on standardized tests of ESL reading ability. (For example, does the training improve performance on other, independent measures of reading ability?)

Expected Results. We hope to find that:

1) There are no differences between the control and trained subjects on the pre-tests.

2) Trained students outperform control students on both the immediate and delayed post-tests. (And, since both groups will have been exposed to the same texts, we can discount the exposure to the texts as a factor, and can conclude that the results are due exclusively to the training.) Specifically, we expect the trained students to be able to identify and use the discourse type to a greater extent than the control students, and we expect the trained students to be able to demonstrate greater recall of the texts than the control students.

3) Trained students demonstrate greater gain scores not only on our own post-tests, but also on the independent measures of reading ability than control students.

On our pilot tests last week, the training students showed significant gain scores in their ability to identify and use top-level organization of the collection of descriptions and comparison discourse types.

(N=9; CofD: Use 77% -- 100%; Identify 44% -- 88%;

Comp: Use 44% -- 77%; Identify 44% -- 88%)

On the post-tests, the students also read faster and wrote more, but we don't have their recalls scored yet for quantity of ideas recalled. Of course, since we weren't pilot testing a control group, I can't give you the comparisons between trained and control subjects.

Future. We would like to run this training study with sufficient numbers of students from different native language backgrounds so that we can determine whether there are any differential effects of the training due to differences in native language background. Because of the heterogenous nature of CESL classes, however, we may have to run the study several times to have sufficient representation of certain native language groups. Also, in the future, we hope to be able to expand the training to other ESL proficiency levels---both higher and lower, in order to determine whether the training is more effective at different proficiency levels---e.g., at lower levels versus higher levels.

Student Reactions. Student reaction to our pilot training was extremely positive. Students expressed the view that they had learned a helpful technique, and that they felt they had benefitted from the training. One very quiet student spoke up and volunteered that most of his life he had hated reading because he never knew what he was looking for, and that now it made sense to him. All the students expressed more confidence in themselves as ESL readers.

Conclusion

I'd like to conclude with a quote from Robert Tierney:

"It is easy to forget that the mastery of the strategy should not displace reading for meaning." (1983:9)

What this means is that, obviously, we view this training on discourse types as only one part of a comprehensive instructional program in ESL reading comprehension which should also include work in schema availability, schema activation, metacognitive training (e.g., inference-awareness, analogy), comprehension monitoring skills, decoding skills, etc. See Collins and Smith (1982) and Pearson and Gallagher (1983) for more on these matters. Teaching the prototypical patterns of different texts would be inappropriate unless such instruction occurs in conjunction with helping students, in a number of ways, to acquire meaning from text.

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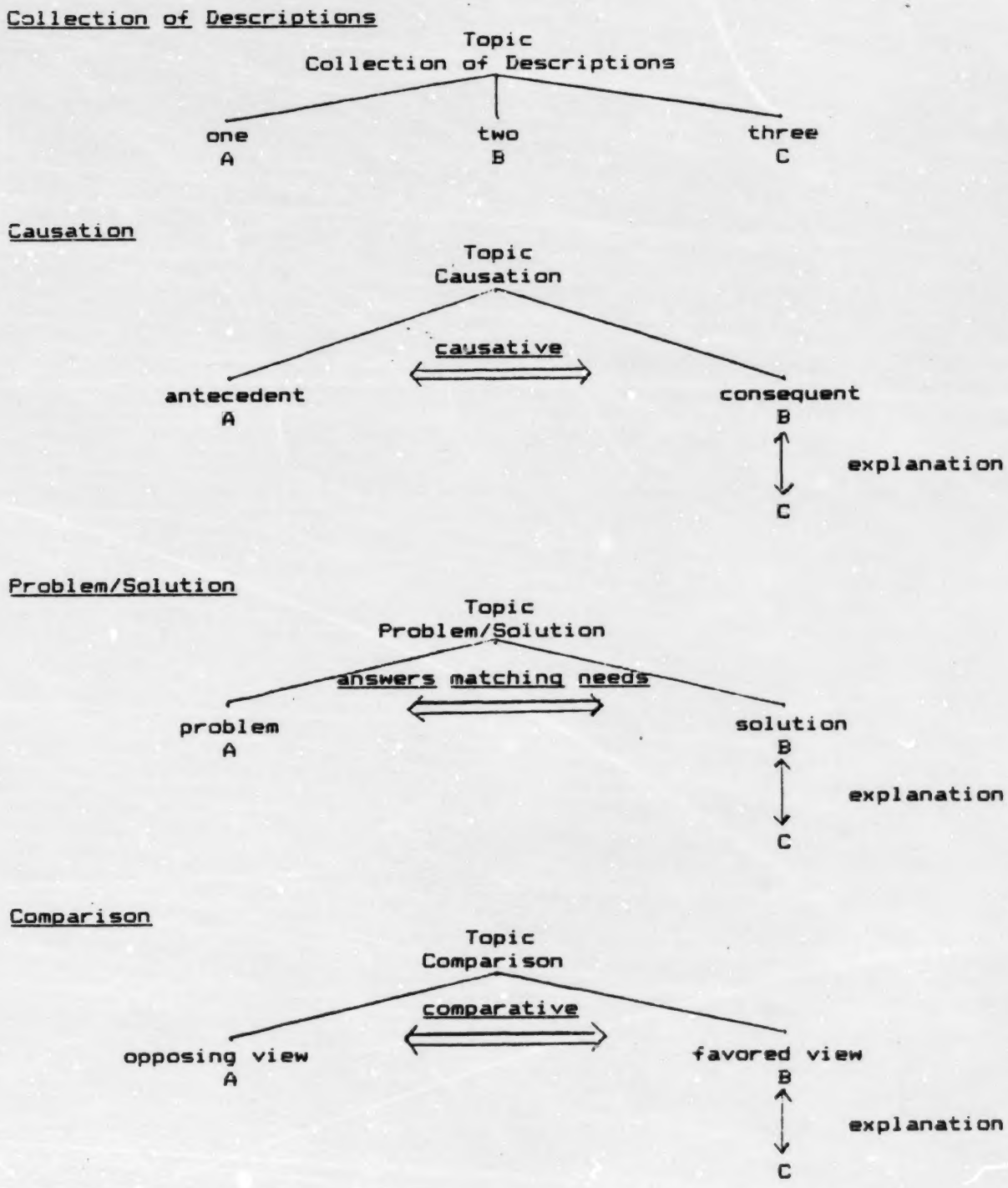

Figure 1
Four Different Types of Top-Level Organization of Expository Text
(Meyer and Freedle 1984, used by permission)